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1. Introduction

History of Pension Plan Growth

In the United States, since the 1930's and even more particularly in the last twenty-five years, a system of income support in non-working old age has developed at a rapid pace. The system has both "public" and "private" components. The major public programs are Old-Age, Survivors, and Disability Insurance (OASDI), which covers by now virtually the whole of the civilian labor force, and old-age assistance payments and veterans' pensions, which provide support under specified conditions of need or military service. The "private" components of the pension structure are the plans run by industrial firms (and nonprofit organizations and unions) for their employees and by governments (other than federal) for the people who work for them. It is the private sector with which our study is concerned; the study seeks to sketch out the likely course of this sector's fiscal operations and fund accumulations over the next fifteen years, and in doing so will provide an idea of the future importance of private pension funds as a financial institution.

This pattern of rapid growth in pension plans and their reserve funds has not been peculiar to the United States; it can be found in most western industrial nations. Among the common factors accounting for an increase in formal arrangements for support in retirement, one can note the following: the movement of population from the countryside to the city, from agriculture to industry; the growing importance of the aged in number and also relative to the total population; increasing physical life expectancy and, more importantly, a decrease in working-life expectancy, with a consequent pronounced increase in the number of years of nonworking old age; the favorable

NOTE: Because the data used in this study were available only after a lag of several years and because it was necessary to choose a starting period based on published data, most of the references to "now" and "currently" mean 1961 and hence "twenty years from now" refers to 1981 and "twenty years ago" to 1941. When this usage is *not* followed, the dates are clearly specified.

2 Private Pension Funds: Projected Growth

tax treatment generally provided for pension plans which permits tax-free accumulation over working life and receipt of the deferred income at a time when rates of tax are characteristically low, hence a diminution in aggregate tax liability over one's lifetime. More specific to the United States (although by no means unique) has

TABLE 1

*Growth of Private Industrial Pension and Deferred Profit-Sharing
Plans and Funds in the United States, 1940-63*

	1940	1945	1950	1955	1960	1963
Covered workers (mil.)	4.1	6.4	9.8	15.4	21.2	23.8
Contributions (\$ bil.)	0.3	1.0	2.1	3.8	5.5	6.2
Beneficiaries (mil.)	0.2	0.3	0.5	1.0	1.8	2.3
Benefit payments (\$ bil.)	0.1	0.2	0.4	0.8	1.8	2.5
Fund earnings (\$ bil.)	0.1 ^a	0.2 ^a	0.3 ^a	0.7	1.7	2.7
Fund assets ^b (\$ bil.)	2.4	5.4	12.0	27.4	52.0	69.9
Annual change in funds ^c (\$ bil.)	0.4 ^a	0.8 ^a	1.9 ^a	3.7	5.4	6.4

Source: Division of the Actuary, Social Security Administration; Securities and Exchange Commission; Institute of Life Insurance; and Roger F. Murray, "Fresh Look at Pension Funds," *Trusts and Estates*, November 1955 and revisions.

^aRough estimate.

^bAt end of year.

^cThese figures may not agree with the results derived from the above entries in the table because of rounding and different bases of estimation.

been the spur to pension growth during World War II, when pensions were used to increase compensation *de facto* in the face of a policy of wage stabilization, and the accelerating effect of the National Labor Relation Board's decision (1948) that pensions are a bargainable item.

A brief summary of the growth of private pension plans and their funds in the United States is sketched out in Tables 1 and 2, which cover industrial and state and local government employee plans respectively. Coverage under private industrial plans has grown five-fold in less than a quarter of a century, and contributions have grown

even more impressively to twenty times their 1940 flow. Similar multiples characterize the growth of beneficiaries and benefits, but, evidencing the youth of the pension plan structure, they are still considerably below covered workers and contributions. Understandably, earnings have increased very considerably, as have fund assets and annual increases therein. On the latter score, over this period private industrial pension plans have gone from a small and un-

TABLE 2

*Growth of State and Local Government Employee Pension Plans
and Funds, 1940-62*

	1940	1945	1950	1955	1960	1962
Covered workers (mil.)	1.4	1.8	2.6	3.5	4.5	4.9
Contributions (\$ bil.)	0.3	0.4	0.9	1.7	2.9	3.3
Beneficiaries (mil.)	0.2	0.2	0.3	0.4	0.6	0.8
Benefit payments (\$ bil.)	0.1	0.2	0.3	0.6	1.0	1.4
Fund assets (\$ bil.) ^a	1.6	2.5	5.2	10.6	19.7	25.0

Source: Institute of Life Insurance, *Private and Public Pension Plans in the United States*, New York [1963], Table 5, p. 19. Differences in definition make these data not strictly comparable with those of Table 9.

^aAt end of fiscal year.

important financial institution to a major factor in the markets for capital. (More will be said about this later in this chapter.) A similar story, not necessary to elaborate, applies to the growth of plans for the employees of state and local governments, as can be seen in Table 2.

This, in brief, has been the history of private pension growth. The purpose of this study is to provide some perspective on the future of this growth. While the concern, therefore, is with numbers, this is not an idle "numbers" game. The fiscal operations of pension plans could have important effects on economic activities that play a crucial role in the stability and growth of the economy and the welfare of its citizens. In addition to providing income support for the aged, the growth of pension arrangements could affect the level

4 Private Pension Funds: Projected Growth

of saving, the particular assets which savers seek to accumulate, the flow of funds to the capital markets and the uses to which funds are put. Whether, in fact, such effects exist or can be expected to occur is not the concern of this study. Whatever the nature and direction of these effects, their importance depends on the magnitude of pension plan fiscal flows and fund accumulation. It is not enough to know what *kind* of effects to expect, i.e., what sort of difference pension plans will make; it is also important to know how *strong* those effects might be. For this latter interest, numbers such as those we have generated are indispensable.

A Closer Look at Pension Funds

A pension plan has fiscal counterparts that may be compared roughly to a bathtub with its drain and faucets both open. The faucets represent fund inflows—that is, contributions by employers and to a lesser degree, as a general rule, by employees—and fund earnings; the drain represents fund outflows, i.e., benefit payments. The change in the level of water in the bathtub represents the net difference between these two flows. To date, and for many years to come, for almost all private industrial plans and the analogous plans that governments provide for their employees, the water in the tub will continue to rise. In other words, the reasonable expectation is that over a good many years most pension plans, and hence pension plans in the aggregate, will pay out less than they take in. Indeed, since the labor force is growing and provisions of pension plans characteristically have been liberalized, it is likely that private pension funds will grow indefinitely. It is in the rest of this century that the major part of this growth is likely to be seen. This study seeks to provide an idea of the order of magnitude of private pension funds and their pattern of growth over the next generation.

Tables 3 and 4 provide a concise view of the growth of pension funds to date and some indication of the importance of the private plans relative to other pension arrangements. Table 5 summarizes the recent portfolios of pension funds. (Magnitudes have changed since 1960, of course, but proportions at this time are much the same.) Table 6 shows the annual net asset changes of the major classes of pension funds in the recent past, and Table 7 brings fund levels up to date. A few brief observations on these data follow.

TABLE 3

Asset Holdings of Pension Funds, Selected Years, 1940-60
(billion dollars)

Pension Program	Assets as of End of				
	1940	1945	1950	1955	1960
OASDI	2.0	7.1	13.7	21.7	22.6
Railroad retirement	0.1	0.7	2.6	3.5	3.7
Federal civilian employees ^a	0.6	2.3	4.2	6.6	10.6
State and local employees	1.6	2.5	5.2	10.6	19.7
Industrial plans	2.4	5.4	12.0	27.4	52.0
Insured	1.0	2.6	5.6	11.3	18.9
Noninsured ^b	1.4	2.9	6.5	16.2	33.1
Total, all programs	6.7	18.1	37.7	69.8	108.6

Source: Institute of Life Insurance, *Private and Public Pension Plans in the United States* (1963), except for SEC revisions in July 1964 and June 1965 of private noninsured and federal civilian 1950-60.

^aPrimarily Civil Service, but includes also Foreign Service and TVA.

^bIncludes multiemployer, nonprofit organization, and Federal Reserve bank plans.

TABLE 4

Percentage Change in Pension Funds over Selected
Five-Year Periods, 1940-60

Pension Program	Percentage Change in Reserves from			
	1940-45	1945-50	1950-55	1955-60
OASDI	255	93	58	4
Railroad retirement	600	271	35	6
Federal civilian employees	283	83	57	61
State and local employees	56	108	104	86
Industrial plans	125	122	128	90
Insured	160	115	102	67
Noninsured	107	124	149	104
Total, all programs	170	108	85	56

Source: Table 3.

TABLE 5
Asset Holdings of Pension Funds by Type, End of 1960
 (billion dollars)

Pension Program	Corporate		State and Local		U.S. Govt. and Fed.		Mortgages	All Other ^a	Total
	Bonds	Stock	Bonds	Govt. Bonds	Agency Bonds	Bonds			
OASDI	—	—	—	—	21.3	—	—	1.3	22.6
Railroad retirement	—	—	—	—	3.7	—	—	—	3.7
Federal civilian employees ^b	—	—	—	—	10.5	—	—	0.1	10.6
State and local employees	6.8	0.4	4.4	—	6.0	1.4	—	0.7	19.7
Industrial plans									
Insured	7.0	0.8	0.6	—	1.0	6.6	—	2.9	18.9
Noninsured ^c	15.7	11.5	—	—	2.7	1.3	—	1.9	33.1
Total, all programs	29.5	12.7	5.0	—	45.2	9.3	—	6.9	108.6

Source: Institute of Life Insurance, *Private and Public Pension Plans in the United States* (1963), p. 22. SEC revisions in July 1964 and June 1965 of private noninsured and federal civilian.

^aIncludes real estate, foreign government securities, other foreign investments, World Bank bonds, cash, and other miscellaneous assets.

^bPrimarily U.S. Civil Service, but includes also Foreign Service and TVA.

^cIncludes multiemployer, nonprofit organizations, and Federal Reserve bank plans.

TABLE 6
Uses of All Public and Private Pension Funds, 1955-60
 (billion dollars)

Uses	1955	1956	1957	1958	1959	1960
Corporate bonds	1.8	2.5	3.3	2.7	2.6	3.1
Corporate stock	0.9	0.9	1.1	1.6	1.9	2.0
State and local govt. bonds	0.4	0.4	0.4	0.5	0.5	0.2
Federal govt. and agency bonds	2.4	1.5	-0.3	2.2	0.2	1.6
Mortgages	1.0	1.0	0.9	0.7	1.2	1.2
All other ^a	b	0.7	1.7	-0.4	0.8	0.9
Total	6.5	7.0	7.1	7.3	7.2	9.0

Source: Institute of Life Insurance, *Private and Public Pension Plans in the United States* (1963), p. 25.

Note: Uses are defined as "increases in outstanding amounts of the specified investment category."

^aIncludes real estate, foreign government securities, other foreign investments, World Bank bonds, cash, other assets, and in 1955-59 assets of noninsured private plans other than corporate noninsured private plans.

^bRounds to zero.

1. All pension programs, in the aggregate, have shown a remarkable growth over the last twenty years, increasing by 1960 to over sixteen times their 1940 level.

2. Over the first ten years, the federal government programs were the heaviest accumulators and most important holders. By the end of the second decade, however, the funds of private industrial plans and state and local government employee plans had far outstripped those of the federal arrangements. In part this was due to the decision by the Old-Age and Survivors Insurance program (OASI) to accumulate less rapidly than originally planned, a decision which is fitting for it to make since a government program, armed with taxing and transfer powers, is not subject to the same actuarial constraints as a private arrangement. But also, the prominent role of private plans is to be explained in terms of their own rapid growth. (Table 4 gives some particulars and the growth rates.)

TABLE 7

Change in Asset Holdings of Pension Funds, 1962-63

(billion dollars)

Pension Program	Book Value of Assets in Fund (end of year)		Change, 1962-63	Per Cent of Change Accounted for by Each Program
	1962	1963		
OASDI	20.7	20.7	0.0	0.0
Railroad retirement	3.7	3.8	0.1	1.0
Federal civil employees	12.7	13.8	1.1	10.7
State and local employees	24.2	27.0	2.8	27.2
Industrial plans				
Insured	21.6	23.3	1.7	16.5
Noninsured corporate	38.2	42.4	4.2	40.7
Other noninsured ^a	3.7	4.1	0.4	3.9
Total	124.8	135.1	10.3	100.0

Source: Securities and Exchange Commission, "Private Noninsured Pension Funds, 1964," *Statistical Bulletin*, June 1965, Table 2.

Note: The data for private plans are from a later source than those used in the projections. The differences, which are not great, are noted here to forestall confusion.

^aIncludes multiemployer, nonprofit organization, and Federal Reserve bank plans.

3. Coincident with the relatively waning position of the federal arrangements and the growing importance of industrial and state and local government plans in annual asset accumulations has come an enhanced role for pension funds in the market for corporate securities and a relative decline in their importance in the government bond market. This can be inferred from Tables 3 and 5, and is pointed up by the data of Table 6.

4. With reference to this study's particular interest, as of the end of 1963, private pension funds—defined to include the funds of industrial plans and those run by state and local governments for their employees—held \$97 billion of assets, about 72 per cent of all

pension fund holdings. During that year they added over \$9 billion to their portfolios, which makes private plans responsible for 90 per cent of all pension fund additions in that year (see Table 7).¹

Both in terms of their holdings of stocks and bonds and annual additions thereto, private pension plans comprise a major entity. Particularly impressive is the magnitude of their net annual accumulation, which constitutes 33 per cent of personal saving in 1963.² Relative, then, to the total savings that people make, pension fund saving is large.

Saving, of course, is a crucially important category of economic behavior. The saving process is intimately involved with the two prime concerns of the economy—growth and stability. Saving is defined here to mean the difference between total output and that portion of total output currently used up in consumption. This process is obviously related to economic growth since it makes capital formation possible, although, of course, it does not guarantee it. It is thus a necessary but not sufficient condition for capital formation; that it makes capital formation possible is the long-run significance of the saving process. But if at a time when the community seeks to save a certain amount a commensurate amount of investment is not forthcoming, the level of output and employment in the community will change. If saving intentions exceed desired investment purchases, not all output will be currently bought and economic activity will decline; while in the reverse case, economic activity (or, under full employment, prices) will increase. Saving, then, is also related to the stability of the economy. This is the short-run significance of the saving process.

¹ Estimates of pension fund assets are available from a number of sources, mainly one or another federal government agency. And, as would be expected, the various estimates differ somewhat in coverage and concepts. For some purposes one set of estimates is convenient, and for other purposes another set.

A further source of potential confusion deserves specific mention here. Work on the study began several years back, when the most current data were those for 1961. Sometimes the values cited for 1962 and 1963 are this study's projections; on other occasions they are the values as published since the study got under way. Such seeming discrepancies do not affect the substance of the discussion.

² Personal savings as defined for the National Income Accounts (see *Survey of Current Business*, July 1964, Table 4). Private industrial pension plans had a net change in reserves of \$6.3 billion, some 23 per cent of personal saving; state and local government employee plans, a net accumulation of \$2.8 billion, or 10 per cent of personal saving.

Pension plans apparently are responsible for a sizable part of annual personal saving. Since pension funds are a new institution, the community's saving propensity has received a powerful fillip, and, indeed, because of pension plans annual savings are at a considerably higher level—all other things equal—than was the case, say, even as short a time as a decade ago.

As with any change in the economy, the differential effect must be considered—not simply the net accumulation that pension funds make every year, but rather whether these annual increases in pension fund reserves represent net new savings or simply a change in the form in which savings are made. Specifically, how different is the level of savings because of the existence of pension plans? Phillip Cagan has directed his attention to this important question and has concluded that in general persons covered by private pensions fail to adjust their other savings commensurately, if at all. Therefore, pension fund accumulations can be considered an addition to saving.³

Even if Cagan had not found this important effect, other strong reasons for being interested in the asset accumulation of pension funds can be cited. For pension fund accumulation is intimately associated with another important process—investment—which in one sense may be looked on as the counterpart of the savings process just discussed. Thus, as regards growth, it is saving that makes possible devoting some part of the current output to future production, but it is investment—defined in physical terms to mean the purchase of plant and equipment or net additions to inventories—that effectuates it. Likewise, if one considers the problem of stability, the role of the capital markets—more particularly, the institutions that constitute them—becomes a matter of serious interest. It is not only the level of savings and investment intentions that are important but the mechanisms that tend to bring these planned levels into adjustment and funnel funds to those who need them. Pension funds, of course, are one of these financial intermediaries.

In recent years pension funds, particularly in terms of their annual purchases, have taken a place among the major institutional investors, and it appears likely that in the years ahead they will become

³ See Phillip Cagan, *The Effect of Pension Plans on Aggregate Saving: Evidence from a Sample Survey*, New York, NBER, 1965. For a similar finding, see George Katona, *Private Pensions and Individual Savings*, Monograph 40, Survey Research Center, Ann Arbor, Mich., 1965.

increasingly important members of this group. The participants in the capital markets consist, on the one hand, of individuals and enterprises that seek funds and, on the other, of institutions and individuals that desire to supply funds. What happens in the market for capital—what prices are set and exchanges made—is mutually determined by the interaction of the desires and needs of the demanders and suppliers of capital.

Pension funds, a major participant in the capital markets, are of course not all alike. There are four types of program:

1. *Pension Funds of the Federal Government.* Currently, reserves are accumulated under OASDI, Railroad Retirement, and the Federal Civil Service Retirement and Disability Program. In total they are large, close to \$38.1 billion in 1963, but the increase per annum is small at present, amounting to \$1.1 billion from 1962 to 1963. Moreover, because they are required by law to invest only in federal obligations (generally special issues) or bonds guaranteed by the federal government, their role in the capital markets is limited. Since an annual surplus (when it occurs) and the consequent growth of these funds makes it less necessary for the government to borrow from other lenders, the considerations they raise seem to lie closer to technical problems of debt management than to broader economic effects.

2. *Insured Industrial Pension Plans.* The reserves maintained by insurance companies for group annuities and individual policy pension trusts aggregated \$23.3 billion by the end of 1963, having increased by \$1.7 billion during the year. These reserves are part and parcel of the total pool of insurance company assets. In any examination of their economic effects, therefore, such funds must be analyzed as part of the life insurance sector of the capital markets. Their role here is substantial. Increases in the policy reserves of insured pension plans represented about 29 per cent of the total amount of net new capital made available by life insurance companies in 1963.⁴

3. *Noninsured Industrial Pension Plans.*⁵ These funds have generated the most interest and discussion in recent years. They have

⁴ I.e., 29 per cent of the increase in total policy reserves. See *Life Insurance Fact Book*, New York, 1964, p. 61.

⁵ An unambiguous terminology is hard to come by. The designation "noninsured" does not mean that these plans are not "insured" (in fact they may be said to be "self-insured"); noninsured simply means not funded with an insurance company. "Industrial" covers nonprofit organizations as well as business firms.

12 Private Pension Funds: Projected Growth

grown rapidly and have been very heavy purchasers of corporate securities. The major component of this category of funds is corporate trustee plans, which, at the end of 1963, held assets that totaled \$42.4 billion (book value), having grown by \$4.2 billion during the year. To this the figures for the funds of nonprofit organizations and multiemployer plans should be added, the latter run by a group of employers in a number of industries in which the employees frequently change employers, e.g., construction, teamsters, and maritime workers. Holdings of such funds came to \$4.1 billion at the end of 1963, having increased by \$400 million over the year.

A breakdown of the investments of all private noninsured funds, corporate, multiemployer, and nonprofit, appears in Table 8. During

TABLE 8
*Assets of Private Industrial Noninsured Pension Funds,
December 31, 1963, and Change, 1962-63*
(million dollars)

Assets	Book Value, 1963	Per Cent of Total Assets	Change, 1962-63
Cash and deposits	773	1.7	66
U.S. government securities	3,049	6.5	124
Corporate bonds	19,560	42.0	1,459
Own company	893	1.9	36
Other companies	18,667	40.1	1,423
Preferred stock	712	1.5	-37
Common stock	18,118	38.9	2,389
Own company	1,335	2.9	151
Other companies	16,783	36.1	2,238
Mortgages	2,220	4.8	344
Other assets	2,122	4.6	317
Total	46,554	100.0	4,664

Source: Securities and Exchange Commission, "Private Noninsured Pension Funds, 1964," *Statistical Bulletin*, June 1965, Table 1.

Note: Includes corporate, multiemployer, nonprofit organization, and Federal Reserve bank plans.

1963, noninsured pension funds, on net balance, purchased \$2.2 billion of common and preferred stock (including investment company shares), almost three times the \$800 million of total net additions to stock issues outstanding. In 1962, their net purchases came to 85 per cent of net additions to outstanding stock. Both 1962 and 1963 are somewhat unusual because of the large net sales by individuals, personal trust funds, and eleemosynary institutions; but even in 1961, a more "normal" year, noninsured pension funds directly or indirectly provided 43 per cent of the net new finance raised in the form of stock. Noninsured corporate funds are also important in the bond market; their net purchases of corporate bonds and notes of \$1.5 billion in 1963 made up 22 per cent of total net additions to corporate debt outstanding.⁶

Throughout this study the phrase "private industrial pension plans" (or funds) will be taken to encompass all of categories 2 and 3 above, while "private pension plans" will mean the inclusion of category 4 below also.

4. *Funds Set Up in Connection with the Retirement Programs Established for Employees of State and Local Governments.* These funds held some \$27 billion of assets by the end of 1963 and have been growing at over \$2.5 billion per annum. A portfolio breakdown as of 1963 is given in Table 9. The funds are heavily concentrated in bonds, government (federal, state, and local) and corporate, and in recent years nongovernmental securities (almost entirely bonds) have constituted the largest net additions to their portfolios. Thus in 1963, three-quarters of their net accumulations took the form of additions to corporate bond holdings, representing something like 35 per cent of corporate net new bond finance. Over the last decade, state and local government employee funds have changed from being holders of federal, state, and local government securities (debt) to holders of debt of more varied form—government bonds, corporate bonds, and mortgages.

Clearly, pension investments have become an important force in the market for capital. Roger Murray has undertaken a broad study of the role of pension funds and the effects they exercise in the

⁶ For the data of this paragraph, see Securities and Exchange Commission, *Statistical Bulletin*, June 1964, Table 6, p. 34.

14 Private Pension Funds: Projected Growth

TABLE 9

*Assets of State and Local Government Employee Retirement
System Funds, 1963, and Change, 1962-63*
(million dollars)

Assets	Book Value, 1963 ^a	Per Cent of Total Assets	Change, 1962-63
Cash and deposits	322	1.2	36
U.S. government securities	6,507	25.1	395
Own government securities	2,224	8.6	- 279
Other state and local securities	1,283	4.9	- 262
Corporate bonds	11,488	44.3	1,965
Corporate stock	880	3.4	186
Mortgages	2,460	9.5	407
Other (including loans to members)	765	3.0	188
Total	25,929	100.0	2,635

Source: *Finances of Employee-Retirement Systems of State and Local Governments in 1963*, Bureau of the Census, Release G-Gf 63, No. 3, May 1964; Bureau of the Census, *Census of Governments: 1962*, Vol. VI, No. 1, *Employee-Retirement Systems of State and Local Government*, 1963.

^aEnd of fiscal year.

capital markets, paying attention to the kinds of financial instruments they buy—government bonds, corporate bonds, mortgages, other debt, and corporate stock. His investigation is concerned not only with how pension funds invest but also with the investment patterns of the other financial intermediaries, since it is the difference between what does happen and what would have happened without them that constitutes the net effect of pension plans.

The economic effects Murray has observed will be important to a greater or lesser degree depending on the size of pension plan reserves in the future. In this connection, the *net change* in reserves each year should be of as much concern as the fund level per se, for the net change shows how strong the effect of the private pension structure on saving will be, and it also indicates how important a role pension funds will play in the capital markets.

The remainder of this volume is concerned with projections of private pension funds up through 1981. Chapters 2 through 6 deal with the funds of industrial pension plans; Chapter 7 with those for state and local government employees. A review of the projections for both groups of private pension plans and a brief summary of the aggregate structure they comprise appears in Chapter 8.